I Claim:

1. A polypeptide capable of specifically activating cytotoxic T lymphocytes *in vivo*, wherein said cytotoxic T lymphocytes (CTLs) specifically target malignant cells.

2. The polypeptide of claim 1, wherein said polypeptide is derived from human p53 protein.

3. The polypeptide of claim 2, wherein said polypeptide has an amino acid residue sequence selected from the group consisting of:

STPPPGTRV;

LLGRNSFEV; and

sequential subsets thereof.

4. The polypeptide of claim 1, wherein said polypeptide is derived from human Her-2/Neu protein.

5. The polypeptide of claim 4, wherein said polypeptide has an amino acid residue sequence selected from the group consisting of:

KIFGSLAFL;

VMAGVGSPYV; and

sequential subsets thereof.

6. A polypeptide having substantial homology with a CTL epitope selected from the group consisting of:

STPPPGTRV;

LLGRNSFEV;

KIFGSLAFL;

VMAGVGSPYV; and

sequential subsets thereof.

7. The polypeptide of claim 6, incorporated into a pharmaceutical composition further comprising a pharmaceutically acceptable carrier.

8. A population of specific cytotoxic T cells capable of lysing tumor cells displaying a specific peptide.

9. The population of claim 8, wherein said peptide is displayed exogenously.

10. The population of claim 8, wherein said peptide is displayed endogenously.

11. The population of claim 8, wherein said CTLs are generated via *in vivo* immunization.

12. The population of claim 8, wherein said specific peptide is derived from p53.

13. The population of claim 8, wherein said specific peptide is derived from Her-2/Neu.

14. A vaccine comprising an immunogenically effective amount of a cytotoxic T-lymphocyte-stimulating peptide.

15. The vaccine of claim 14, wherein said peptide is selected from the group consisting of:

STPPPGTRV;

LLGRNSFEV;

KIFGSLAFL;

VMAGVGSPYV; and

sequential subsets thereof.

16. The vaccine of claim 14, wherein said peptide is linked to a carrier.

17. The vaccine of claim 14, wherein said peptide is introduced into a mammal as a homopolymer.

18. The vaccine of claim 14, wherein said peptide is introduced into a mammal as a heteropolymer.

19. A method of generating activated CTL cells *in vivo*, which method comprises contacting, *in vivo*, CTL cells with antigen-loaded Class I molecules surface-expressed on murine cells for a time period sufficient to activate, in an antigen-specific manner, said CTL cells.

20. The method of claim 19, wherein said Class I molecules are human Class I MHC molecules.

21. The method of claim 19, wherein said Class I molecules are chimeric human-mouse Class I MHC molecules.

22. The method of claim 19, further comprising:

a. separating said activated CTL cells from said antigen-loaded Class I MHC molecules;

b. suspending said activated CTL cells in an acceptable carrier or excipient; and

c. administering said suspension to an individual in need of treatment.

23. A method of generating CTL cells that will target a specific population of cells, comprising:

a. administering an immunogenic polypeptide specific to said specific population of cells to an animal, thereby generating a population of antigen-loaded Class I molecules displaying said polypeptides on their cell surfaces;

b. contacting, *in vivo*, a population of CTL cells with said population of antigen-loaded Class I molecules for a time period sufficient to activate, in an

antigen-specific manner, said CTL cells; and

c. harvesting said activated CTL cells from said animal.

24. The method of claim 23, wherein said polypeptide is selected from the group consisting of:

LLPENNVLSPL;

RMPEAAPPV;

STPPPGTRV;

LLGRNSFEV;

and sequential subsets thereof.

25. The method of claim 23, wherein said polypeptide is selected from the group consisting of:

KIFGSLAFL;

VMAGVGSPYV; and

sequential subsets thereof.

26. The method of claim 23, wherein said Class I molecules are human Class I MHC molecules.

27. The method of claim 23, wherein said Class I molecules are chimeric human-mouse Class I MHC molecules.

28. A method of specifically killing target cells in an individual using specific, activated CTLs, comprising the following steps:

a. obtaining a fluid sample containing T cells from said individual;

b. loading empty Class I MHC molecules with at least one species of antigenic peptide, wherein the peptide is substantially homologous to at least a portion of a peptide derived from said target cell;

c. admixing said T cells with an amount of peptide-loaded Class I MHC molecules sufficient to produce activated CTLs;

d. harvesting said activated CTLs; and

e. administering said activated CTLs to said individual.

29. A method of provoking an immune response to a tumor-associated antigen, comprising contacting a cytotoxic T lymphocyte with an immune response-provoking amount of a molecule comprising a peptide selected from the group consisting of:

STPPPGTRV;

LLGRNSFEV;

KIFGSLAFL;

VMAGVGSPYV; and

sequential subsets thereof.

30. The method of claim 29, wherein said contacting occurs in a mammal.

31. The method of claim 29, wherein said contacting occurs *in vitro*.

32. The method of claim 29, wherein said method further comprises returning said contacted cytotoxic T cells to the host.

33. The method of claim 29, wherein said polypeptide is co-administered with a second polypeptide that induces a T helper response.

34. The method of claim 29, wherein said polypeptide and said T helper-inducing polypeptide are conjugated to one another.

35. A method of identifying specific cytotoxic T cells (CTLs) responsive to a specific T cell epitope, comprising the following steps:

a. obtaining a test sample of lymphocytes from an individual, wherein said test sample is to be assayed for the presence of said specific CTLs;

b. contacting target cells with a molecule comprising a peptide selected from the group consisting of STPPPGTRV, LLGRNSFEV, KIFGSLAFL, VMAGVGSPYV, and sequential subsets thereof, wherein said target cells are of the same HLA class as said lymphocytes to be tested for said specific CTLs;

c. contacting said test sample with a molecule according to step b, under conditions sufficient to restimulate said specific CTLs to respond to appropriate target cells; and

d. determining whether said test sample of lymphocytes exerts a cytotoxic effect on said target cells, thereby confirming the presence of said specific CTLs.

36. A method of detecting specific cytotoxic T cells (CTLs) having receptors capable of binding a specific T cell epitope in a tissue sample, comprising the following steps:

a. obtaining a test sample of lymphocytes from an individual, wherein said test sample is to be assayed for the presence of said specific CTLs;

b. contacting said test sample with a molecule comprising a label and a peptide selected from the group consisting of STPPPGTRV, LLGRNSFEV, KIFGSLAFL, VMAGVGSPYV, and sequential subsets thereof, to form an admixture;

c. maintaining said admixture under suitable assay conditions for a predetermined period of time, sufficient to restimulate any specific CTLs in said test sample to respond to appropriate target cells;

d. harvesting such contacted cells and washing with medium in the

absence of the labeled molecule sufficient to remove any unbound labeled molecule; and

e. measuring the bound labeled molecule using suitable measuring means.

37. A method of detecting anti-p53 antibodies in an individual, comprising:

a. obtaining a fluid sample from an individual to be tested;

b. adding a predetermined amount of p53 polypeptide to said sample, to form an admixture;

c. maintaining said admixture under biological assay conditions for a period of time sufficient to allow said p53 polypeptide to immunoreact with any anti-p53 antibodies present in said sample; and

d. assaying for the presence of an immunoreaction product, thereby confirming the presence of anti-p53 antibodies.

38. The method of claim 37, wherein said p53 polypeptide is selected from the group consisting of STPPPGTRV, LLGRNSFEV, KIFGSLAFL, VMAGVGSPYV, and sequential subsets thereof.

39. The method of claim 37, wherein said p53 polypeptide comprises two or more different polypeptides selected from the group consisting of STPPPGTRV, LLGRNSFEV, KIFGSLAFL, VMAGVGSPYV, and sequential subsets thereof.

40. An assay system in kit form comprising a package containing, in an amount sufficient to perform at least one assay, at least one species of polypeptide comprising no more than about 50 amino acid residues and including an amino acid residue sequence selected from the group consisting of:

LLPENNVLSPL;

RMPEAAPPV;

STPPPGTRV;

LLGRNSFEV; and

sequential subsets thereof.

41. The assay system according to claim 40, wherein said polypeptide is affixed to a solid matrix.

42. The assay system according to claim 40, wherein said polypeptide comprises more than one species of polypeptide and wherein said species are present as an admixture.

43. The assay system according to claim 40, further including, in a separate package, a labeled specific binding agent for signaling the presence of a polypeptide-containing immunoreaction product.

44. An assay system in kit form comprising a package containing, in an amount sufficient to perform at least one assay, an antibody combining site-containing molecule capable of immunoreacting with a tumor-associated antigen.

45. The assay system according to claim 40, wherein said molecule is affixed to a solid matrix.

46. The assay system according to claim 40, wherein said molecule is labeled.

47. An antibody molecule that immunoreacts with a polypeptide according to claim 1.

48. An antibody molecule according to claim 47, wherein said antibody molecule is monoclonal.

49. An antibody molecule according to claim 47, wherein said antibody molecule is polyclonal.

50. A composition comprising one or more antibody molecules according to claim 47.

51. A hybridoma capable of secreting an antibody according to claim 47.

52. A molecule comprising a polypeptide having substantial homology with a CTL epitope selected from the group consisting of:

STPPPGTRV;

LLGRNSFEV;

KIFGSLAFL;

VMAGVGSPYV; and

sequential subsets thereof.

53. The molecule of claim 52, wherein said molecule comprises at least about eight amino acids and fewer than about 50 amino acids.

54. The molecule of claim 52, wherein said molecule comprises at least about eight amino acids and fewer than about thirteen amino acids.

55. The molecule of claim 52, wherein said polypeptide has an amino acid residue sequence substantially homologous to that of any of said CTL epitopes.

56. The molecule of claim 52, wherein said polypeptide is conjugated to a substance, wherein said substance is selected from the group consisting of a radiolabel, an enzyme, a fluorescent label, a solid matrix, a carrier, and a second CTL epitope.

57. The molecule of claim 52, wherein said substance is a second CTL epitope.

58. The molecule of claim 52, wherein said second epitope is a T helper epitope.

59. The molecule of claim 52, wherein said carrier comprises an immunogenic lipid or protein.

60. The molecule of claim 52, wherein said polypeptide is conjugated to said substance indirectly by a linker.